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#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§
Murtaza F. Alibhai	§ Group Art Unit: Unknown
James D. Astwood	§
Charles A. McWherter	§ Examiner: Unknown
Hugh A. Sampson	§
	§ Atty. Dkt. No.: 11899.0217.DVUS02
Serial No.:	§ (MOBT:2171)
	<b>§</b>
Filed: Herewith	§
	§
	§
For: Preparation of Deallergenized	§
PERMUTEINS AND PATATINS	§

#### **INFORMATION DISCLOSURE STATEMENT**

MAIL STOP PATENT APPLICATION Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on the attached Form PTO-1449 be considered by the Examiner and made of record.

In accordance with 37 C.F.R §§ 1.97(g),(h), this Information Disclosure Statement should not be construed as a representation that a search has been made, and is not to be construed to be

an admission that the information cited is prior art or is considered to be material to patentability

as defined in 37 C.F.R. § 1.56(b).

This Information Disclosure Statement is being filed prior to the receipt of a first Office

Action reflecting an examination on the merits, and hence is believed to be timely in accordance

with 37 C.F.R. § 1.97(b). Accordingly, no fee is believed to be due. Should any fees be deemed

necessary, however, the Commissioner is hereby authorized to charge any such fees to Deposit

Account No. 01-2508/11899.0217.DVUS02.

This application is a divisional application of Serial No. 09/755,630, filed January 5,

2001, and is relied upon for an earlier filing date under 35 U.S.C. § 120. In accordance with

Rule 37 C.F.R. § 1.98(d), copies of the listed documents are not enclosed as they have been

previously cited by or submitted to the Patent and Trademark Office in prior application Serial

No. 09/755,630, and because those references cited by the Applicant in that prior application

were submitted in Rule-compliant Information Disclosure Statements.

Applicant respectfully requests that the listed documents be considered and made of

record in the present case, and that the Examiner initial the spaces on the accompanying Form

PTO-1449 to evidence the same.

Respectfully submitted,

Monte R. Rhodes, Ph.D.

Reg. No. 54,396

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Agent for Assignee

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Date: <u>September 9, 2003</u>

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Serial No.: Atty. Docket No.: Form PTO-1449 (modified) 11899.0217.DVUS02 Unknown List of Patents and Publications for Applicant's **Applicant** MURTAZA F. ALIBHAI et al. INFORMATION DISCLOSURE STATEMENT Filing Date: Group: (Use several sheets if necessary) To be assigned Herewith Other Art **Foreign Patent Documents U.S. Patent Documents** See Page 1-6 See Page 1 See Page 1

#### **U.S. Patent Documents**

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	Al	5,743,477	04/28/98	Walsh et al.	424	94.6	08/27/92
	A2	5,882,668	03/16/99	Garnaat et al.	424	405	11/26/96
	A3						

#### **Foreign Patent Documents**

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	WO 94/21805	09/29/94	WIPO	C12N	15/82	
	B2	WO 96/37615	11/28/96	WIPO	C12N	15/29	
	В3	2090552	08/27/94	Canada	C12N	15/82	
	B4	WO 99/45961	09/16/99	WIPO	A61K	39/395	
	B5	WO 99/38978	08/05/99	WIPO	C12N	15/29	
	В6	WO 98/54327	12/03/98	WIPO	C12N	15/29	

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Gaillaird, T., The Enzymic Deacylation of Phospholipids and Galactolipids in Plants, <i>Biochem. J.</i> , 121: 379-390 (1971).
	C2	Racusen, D., Light acyl hydrolase of patatin, Can. J. Bot., 62: 1640-1644 (1984).
	СЗ	Andrews, D.L., et al., Characterization of the lipid acyl hydrolase activity of the major potato ( <i>Solanum tuberosum</i> ) tuber protein, patatin, by cloning and abundant expression in a baculovirus vector, Biochem. J., 252: 199-206 (1988).
	C4	Strickland, J.A., et al., Inhibition of <i>Diabrotica</i> Larval Growth by Patatin, the Lipid Acyl Hydrolase from Potato Tubers, <i>Physiol.</i> , 109: 667-674 (1995).

Examiner:	DATE CONSIDERED:

Form PTO-1449 (modified)		Atty. Docket No.: Serial No.: Unknown		
List of Patents and Publications for Applicant's		Applicant		
		MURTAZA F. ALIBHAI et al.		
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U.S. Patent Documents	Foreign Patent Documents		Other Art	
See Page 1	See Page 1		See Page 1-6	

Exam. Init.	Ref. Des.	Citation
	C5	Hofgen, R. and Willmitzer, L., Biochemical and Genetic Analysis of Different Patatin Isoforms Expressed in Various Organs of Potato (Solanum Tuberosum), Plant Science, 66: 221-230 (1990).
	C6	Mignery, G.A., et al., Isolation and sequence analysis of cDNAs for the major potato tuber protein, patatin, <i>Nucleic Acids Research</i> , 12: 7987-8000 (1984).
	C7	Mignery, G.A., et al., Molecular characterization of the patatin multigene family of potato, <i>Gene</i> , 62: 27-44 (1988).
	C8	Stiekema, W.J., et al., Molecular cloning and analysis of four potato tuber mRNAs, <i>Plant Mol. Biol.</i> , 11: 255-269 (1988).
	C9	Ganal, M.W., et al., Genetic and physical mapping of the patatin genes in potato and tomato, <i>Mol. Gen. Genetics</i> , 225: 501-509 (1991).
	C10	Vancanneyt, G., et al., Expression of a Patatin-like Protein in the Anthers of Potato and Sweet Pepper Flowers, <i>Plant Cell</i> , 1: 533-540 (1989).
	C11	Rosahl, S., et al., Expression of a tuber-specific storage protein in transgenic tobacco plants: demonstration of an esterase activity, <i>EMBO J.</i> , 6: 1155-1159 (1987).
	C12	King, H.C., Exploring the Maze of Adverse Reactions to Foods, Ear Nose Throat J., 73(4): 237-241 (1994).
	C13	Astwood, J.D., et al., Pollen allergen homologues in barley and other crop species, <i>Clin. Exp. Allergy</i> , 25: 66-72 (1995).
	C14	Astwood, J.D., and Fuchs, R.L., Allergenicity of Foods Derived from Transgenic Plants, Monographs in allergy Vol. 32: Highlights in food allergy, pp. 105-120 (1996).
	C15	Metcalfe, D.D., et al., Assessment of the Allergenic Potential of Foods Derived from Genetically Engineered Crop Plants, <i>Critical Reviews in Food Science and Nutrition</i> , 36S: 165-186 (1996).
	C16	Elsayed, S. and Apold, J., Immunochemical Analysis of Cod Fish Allergen M: Locationsof the Immunoglobulin Binding Sites as Demonstrated by the Native and Synthetic Peptides, <i>Allergy</i> , 38(7): 449-459, 1983.
	C17	Elsayed, S., et al., The structural requirements of epitopes with IgE binding capacity demonstrated by three major allergens from fish, egg, and tree pollen, <i>Scand. J. Clin. Lab. Invest. Suppl.</i> , 204: 17-31 (1991).

Examiner:	DATE CONSIDERED:				
EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH					
CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.					

Form PTO-1449 (modified)		Serial No.: Unknown
••	Applicant MURTAZA F	. ALIBHAI et al.
Information Disclosure Statement		
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Foreign Patent Documents		Other Art See Page 1-6
	y) Foreign P	MURTAZA F Filing Date: Herewith

Exam. Init.	Ref. Des.	Citation
	C18	Zhang, L., et al., Mapping of Antibody Binding Epitopes of a Recombinant <i>Poa p IX</i> Allergen, <i>Mol. Immunol.</i> , 29(11); 1383-1389 (1992).
	C19	Hefle, S., et al., Allergenic Foods, Crit. Rev. in Food Sci. Nutr., 36S: 69-90 (1996).
	C20	Church, et al., In: Kay, A.B. ed., Allergy and Allergic Diseases, Oxford, Blackwell Science, pp. 149-197 (1997).
	C21	Castells, M.C., Allergy to white potato, Allergy Clin. Immunol., 8: 1110-1114 (1986).
	C22	Hannuksela, M., et al., Immediate reactions to fruits and vegetables, <i>Contact Dermatitis</i> , 3: 79-84 (1977).
	C23	Golbert, T.M., et al., Systematic allergic reactions to ingested antigens, <i>Journal of Allergy</i> , 44: 96-107 (1969).
	C24	Wahl, R., et al., IgE-Mediated Allergic Reactions to Potatoes, <i>Intl. Arch. Allergy Appl. Immunol.</i> , 92: 168-174 (1990).
	C25	Ebner, C., et al., Identification of Allergens in Apple, Pear, Celery, Carrot and Potato: Cross-Reactivity with Pollen Allergens, in: Wuthrich, B. & Ortolani, C. (eds)., <i>Highlights in Food Allergy. Monographs in Allergy</i> , Volume 32 Basil, Karger, pp. 73-77 (1996).
	C26	Seppala, U., et al., Identification of patatin as a novel allergen for children with positive skin prick test responses to raw potato, <i>J. Allergy Clin. Immunol.</i> , 103: 165-171 (1999).
	C27	Cunningham, B.A., et al., Favin versus concanavalin A: Circularly permuted amino acid sequences, <i>Proc. Natl. Sci., U.S.A.</i> , 76: 3218-3222 (1979).
	C28	Teather, R.M., et al., DNA Sequence of a <i>Fibrobacter succinogenes</i> Mixed-Linkage, β-Glucanase (1,3-1,4-β-D-Glucan 4-Glucanohydrolase) Gene, J. <i>Bacteriol.</i> , 172; 3837-3841 (1990).
	C29	Schimming, S., et al., Structure of the <i>Clostridium thermocellum</i> gene <i>lic</i> B and the encoded $\beta$ -1,3-1,4-glucanase, <i>Eur. J. Biochem.</i> , 204: 13-19 (1992).
	C30	Yamiuchi, D., et al., Structure of the gene encoding concanavalin A from <i>Canavalia gladiata</i> and its expression in <i>Escherichia coli</i> cells, FEBS <i>Lett.</i> , 260: 127-130 (1991).
	C31	MacGregor, E.A, et al., A circularly permuted α-amylase-type $\alpha/\beta$ -barrel structure in glucan-synthesizing glucosyltransferases, <i>FEBS Lett.</i> , 378: 263-266 (1996).

Examiner:	DATE CONSIDERED:

Form PTO-1449 (modified)		Atty. Docket No.: 11899.0217.DVUS	Serial No.: 002 Unknown
List of Patents and Publications for Applicant's		Applicant	
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See Page 1	See Page 1		See Page 1-6

Exam. Init.	Ref. Des.	Citation
	C32	Goldenberg, D.P. and Creighton, T.E., Circular and Circularly Permuted Forms of Bovine Pancreatic Trypsin Inhibitor, <i>J. Mol. Biol.</i> , 165: 407-413 (1983).
	C33	Li, X. and Coffino, P., Degradation of Ornithine Decarboxylase: Exposure of the C-Terminal Target by a Polyamine-Inducible Inhibitory Protein, <i>Mol. Cell. Biol.</i> , 13: 2377-2383 (1993).
	C34	Zhang, T., et al., Entropic effects of disulphide bonds on protein stablity, <i>Nature Struct. Biol.</i> , 1: 434-438 (1995).
	C35	Buchwalder, A., et al., A Fully Active Variant of Dihydrofolate Reductase with a Circularly Permuted Sequence, <i>Biochemistry</i> , 31: 1621-1630 (1994).
	C36	Protasova, N.Y., et al., Circularly permuted dihydrofolate reductase of <i>E. coli</i> has functional activity and a destabilized tertiary structure, <i>Prot. Eng.</i> , 7: 1373-1377 (1994).
	C37	Mullins, L.S., et al., Transposition of Protein Sequences: Circular Permutation of Ribonuclease T1, J. Am. Chem. Soc., 116: 5529-5533 (1994).
	C38	Garrett, J.B., et al., Are turns required for the folding of ribonuclease T1, <i>Protein Science</i> , 5: 204-211 (1996).
	C39	Hahn, M., et al., Native-like <i>in vivo</i> folding of a circularly permuted jellyroll protein shown by crystal structure analysis, <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 91: 10417-10421 (1994).
	C40	Yang, Y.R. and Schachman, H.K., Aspartate transcarbamoylase containing circularly permuted catalytic polypeptide chains, <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 90: 11980-1194 (1993).
	C41	Luger, K., et al., An 8-fold $\beta\alpha$ barrel protein with redundant folding possibilities, <i>Prot. Eng.</i> , 3: 249-258 (1990).
	C42	Luger, K., et al., Correct Folding of Circularly Permuted Variants of a βα Barrel Enzyme in Vivo, <i>Science</i> , 243: 206-210 (1989).
	C43	Lin, X., et al., Rearranging the domains of pepsinogen, <i>Protein Science</i> , 4: 159-166 (1995).
	C44	Vignais, M.L., et al., Circular permutation within the coenzyme binding domain of the tetrameric glyceraldehyde-3-phosphate dehydrogenase from <i>Bacillus stearothermophilus</i> , <i>Protein Science</i> , 4: 994-1000 (1995).
	C45	Ritco-Vonsovici, M., et al., Is the Continuity of the Domains Required for the Correct Folding of a Two-Domain Protein, <i>Biochemistry</i> , 34: 16543-16551 (1995).

	Examiner:	DATE CONSIDERED:
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Form PTO-1449 (modified)		Atty. Docket No.: 11899.0217.DVUS02	Serial No.: Unknown
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U.S. Patent Documents	Foreign Patent Documents		Other Art
See Page 1	See Page 1		See Page 1-6

Exam. Init.	Ref. Des.	Citation
	C46	Horlick, R.A., et al., Permuteins of interleukin 1β-a simplified approach for the construction of permutated proteins having new termini, <i>Protein Eng.</i> , 5: 427-431 (1992).
	C47	Kreitman, R.J., et al., Circularly Permuted Interleukin 4 Retains Proliferative and Binding Activity, Cytokine, 7: 311-318 (1995).
	C48	Viguera, A.R., et al., The Order of Secondary Structure Elements does not Determine the Structure of a Protein but does Affect its Folding Kinetics, <i>J. Mol. Biol.</i> , 247: 670-681 (1995).
	C49	Koebnik, R. and Kramer, L., Membrane Assembly of Circularly Permuted Variants of the <i>E. coli</i> Outer Membrane Protein OmpA, <i>J. Mol. Biol.</i> , 250: 617-626 (1995).
	C50	Kreitman, R.J., et al., A ciruclarly permuted recombinant interleukin 4 toxin with increased activity, <i>Proc. Natl. Avad. Sci.</i> , 91: 6889-6893 (1994).
	C51	Stanley, J.S., et al., Identification and Mutational Analysis of the Immunodominant IgE Binding Epitopes of the Major Peanut Allergen Ara h 2, <i>Arch. Biochem. Biophys.</i> , 342(2): 244-253 (1997).
	C52	Hopp, T.P. and Woods, K.R., A Computer Program for Predicting Protein Antigenic Determinants, <i>Mol. Immunol.</i> , 20: 483-489 (1983).
	C53	Kyte, J. and Doolittle, R.F., A Simple Method for Displaying the Hydropathic Character of a Protein, J. Mol. Biol., 157: 105-132 (1982).
	C54	Lee, B. and Richards, F.M., The Interpretation of Protein Structures: Estimation of Static Accessibility, J. Mol. Biol., 55: 379-400 (1971).
	C55	Karplus, P.A. and Schulz, G.E., Prediction of Chain Flexibility in Proteins, <i>Naturwissenschaften</i> , 72: 212-213 (1985).
	C56	Sandhu, J., Protein Engineering of Antibodies, Critical Rev. Biotech., 12: 437-467 (1992).
	C57	Fuchs, R.L. and Astwood, J.D., Allergenicity Assessment of Foods Derived from Genetically Modified Plants, <i>Food Technology</i> , 50: 83-88 (1996).
	C58	Kasturi, L., et al., Regulation of N-linked core glycosylation: use of a site-directed mutagenesis approach to identify Asn-Xaa-Ser/Thr sequons that are poor oligosaacharide acceptors, <i>Biochem</i> . <i>J.</i> , 323: 415-519 (1997).
	C59	Melquist, J.L., et al., The Amino Acid Following an ASN-X-Ser/Thr Sequon is an Important Determinant of N-Linked Core Glycosylation Efficiency, <i>Biochemistry</i> , 37: 6833-6837 (1998).

Examiner:	DATE CONSIDERED:

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# Other Art (Including Author, Title, Date Pertinent Pages, Etc.) Ref. Citation Exam. Init. Des. et al. Re-Engineering Patatin (Solt 1) Protein to Eliminate la E Rinding I Alleroy

C60	Alibhai, M., et al. Re-Engineering Patatin (Sol t 1) Protein to Eliminate IgE Binding, J. Allergy Clin. Immunol., Vol. 105, no. 1 (part 2): S79, paper 239 (2000).
C61	Astwood, J.D., et al. Identification and Characterization of IgE Binding Epitopes of Patatin, a Major Food Allergen of Potato, J. Allergy Clin. Immunol., Vol. 105, no. 1 (part 2): S184, paper 555 (2000).
C62	Rabjohn, P., et al. Molecular Cloning and Epitope Analysis of the Peanut Allergen Ara h 3, J. Clin. Invest., NY, 103: 535-542 (1999)
C63	Rosahl, S.; Schmidt, R.; Schell, J.; Willmitzer, L. "Isolation and Characterization of a Gene from Solanum tuberosum Encoding Patatin, the Major Storage Protein of Potato Tubers." <i>Mol. Gen. Genet.</i> 1986, 203: 214-220.
C64	Helm, R.M.; Cockrell, G.; Herman, E.; Burks, A.W.; Sampson, H.A.; Bannon, G.A. "Cellular and Molecular Characterization of a Major Soybean Allergan." <i>Int. Arch. Allergy Immunol.</i> 1998, 117: 29-37.
 C65	Shin, D.S., et al. "Biochemical and Structural Analysis of the IgE Binding Sites on Ara h1, and Abundant and Highly Allergenic Peanut Protein." J. Biol. Chem. 1998, 273 (22): 13753-13759.
 C66	

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